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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,233	07/25/2002	Jinliang Qiao	U 013868-3	9932

140 7590 04/21/2008

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EXAMINER	
FEELY, MICHAEL J	
ART UNIT	PAPER NUMBER
1796	
MAIL DATE	DELIVERY MODE
04/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/049,233	QIAO ET AL.	
	Examiner	Art Unit	
	Michael J. Feely	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6,7,9,10,14,16,18-25,27,28 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,7,9,10,14,16,18-25,27,28 and 30* is/are rejected.

7)☒ Claim(s) *28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 July 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Pending Claims

Claims 1, 6, 7, 9, 10, 14, 16, 18-25, 27, 28, and 30 are pending.

Response to Amendment

1. The rejection of claim 29 under 35 U.S.C. 112, first paragraph, has been rendered moot by the cancellation of this claim.

2. The rejection of claims 9, 10, 14, 16, 22, 24, and 27 under 35 U.S.C. 112, first paragraph, has been overcome by amendment.

3. The rejection of claim 29 under 35 U.S.C. 112, second paragraph, has been rendered moot by the cancellation of this claim.

4. The rejection of claims 9, 10, 14, 16, 22, 24, and 27 under 35 U.S.C. 112, second paragraph, has been overcome by amendment.

5. The rejection of claim 29 under 35 U.S.C. 102(b) as being anticipated by Otawa et al. (US Pat. No. 4,818,785) has been rendered moot by the cancellation of this claim.

6. The rejection of claims 9, 10, 14, 16, 22, 24, and 27 under 35 U.S.C. 102(b) as being anticipated by Otawa et al. (US Pat. No. 4,818,785) has been overcome by amendment.

7. The rejection of claims 12 and 26 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Otawa et al. (US Pat. No. 4,818,785) has been rendered moot by the cancellation of these claims.

8. The rejection of claims 1, 6, 7, 18-21, 23, 25, 28, and 30 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Otawa et al. (US Pat. No. 4,818,785) has been overcome by amendment.

9. The rejection of claims 12, 26, and 29 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-6 and 18 of U.S. Patent No. 6,838,490 has been rendered moot by the cancellation of these claims.

10. The rejection of claims 12, 26, and 29 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-16 of U.S. Patent No. 6,998,438 has been rendered moot by the cancellation of these claims.

11. The rejection of claims 12, 26, and 29 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-6, 22, and 23 of U.S. Patent No. 6,423,760 has been rendered moot by the cancellation of these claims.

Claim Objections

12. Claim 28 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 28 is independent from claim 12, which has been cancelled.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1, 6, 7, 9, 10, 14, 16, 18-25, 27, 28, and 30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-6 and 18 of U.S. Patent No. 6,838,490. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

The combined limitations of the patented claims anticipate the instantly claimed invention with the following exceptions: (1) the patented claims fail to explicitly set forth the claimed weight ratios of rubber phase to plastic matrix *(see instant claims 1, 9, 10, 20)*; (2) the patented claims fail to explicitly set forth a *spheroidic* rubber phase *(see instant claims 1, 30)*; (3) the patented claims fail to explicitly set forth specific polymer matrix materials *(see instant claims 7 & 16)*; and (4) the patented claims fail to explicitly disclose a method of preparing a molded article *(see instant claim 18)*.

With respect to (1), it would have been obvious to one of ordinary skill in the art to optimize this ratio because the rubber is being added to *toughen* the polymer matrix. In other words, this ratio is a result-effective variable – *see MPEP 2144.05*.

With respect to (2), this *spheroidic* rubber phase would have been inherently present due to the irradiation-vulcanization of latex.

With respect to (3), one of ordinary skill in the art would have immediately envisaged these polymer materials as the (thermoplastic) polymer matrix being toughened. Alternatively, this would have been obvious in light of the teachings of Coran et al. and/or Otawa et al.

With respect to (4), one of ordinary skill in the art would have immediately envisaged this molding process, in light of forming a toughened material. Alternatively, this would have been obvious in light of the teachings of Coran et al. and/or Otawa et al.

15. Claims 1, 6, 7, 9, 10, 14, 16, 18-25, 27, 28, and 30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-16 of U.S. Patent No. 6,998,438. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

The combined limitations of the patented claims anticipate the instantly claimed invention with the following exceptions: (2) the patented claims fail to explicitly set forth a *spheroidic* rubber phase *(see instant claims 1, 30)*; and (4) the patented claims fail to explicitly disclose a method of preparing a molded article *(see instant claim 18)*.

With respect to (2), this *spheroidic* rubber phase would have been inherently present due to the irradiation-vulcanization of latex. Said irradiation-vulcanization would have been

obviously envisaged in light of claims 15 and 16, and further in light of the working examples – *See: In re Vogel*, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970); MPEP 804, II, B, 1.

With respect to (4), one of ordinary skill in the art would have immediately envisaged this molding process, in light of forming a toughened material. Alternatively, this would have been obvious in light of the teachings of Coran et al. and/or Otawa et al.

16. Claims 1, 6, 7, 9, 10, 14, 16, 18-25, 27, 28, and 30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-6, 22, and 23 of U.S. Patent No. 6,423,760. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

The combined limitations of the patented claims anticipate the instantly claimed invention with the following exceptions: (1) the patented claims fail to explicitly set forth the claimed weight ratios of rubber phase to plastic matrix *(see instant claims 1, 9, 10, 20)*; (2) the patented claims fail to explicitly set forth a *spheroidic* rubber phase *(see instant claims 1, 30)*; (3) the patented claims fail to explicitly set forth specific polymer matrix materials *(see instant claims 7 & 16)*; and (4) the patented claims fail to explicitly disclose a method of preparing a molded article *(see instant claim 18)*.

With respect to (1), it would have been obvious to one of ordinary skill in the art to optimize this ratio because the rubber is being added to *toughen* the polymer matrix. In other words, this ratio is a result-effective variable – *see MPEP 2144.05*.

With respect to (2), this *spheroidic* rubber phase would have been inherently present due to the irradiation-vulcanization of latex.

With respect to (3), one of ordinary skill in the art would have immediately envisaged these polymer materials as the (thermoplastic) polymer matrix being toughened. Alternatively, this would have been obvious in light of the teachings of Coran et al. and/or Otawa et al.

With respect to (4), one of ordinary skill in the art would have immediately envisaged this molding process, in light of forming a toughened material. Alternatively, this would have been obvious in light of the teachings of Coran et al. and/or Otawa et al.

Response to Arguments

17. Applicant's arguments filed January 24, 2008 have been fully considered but they are not persuasive.

Regarding the ODP rejection over 6,838,490, Applicant's argument focuses on the claimed weight ratio of rubber phase to the plastic phase. Applicant argues that, "The Examiner has respectfully not pointed to anything in the claims of the '490 patent to show any such recognition *(of the result-effective nature of this ratio)* and, accordingly, has respectfully not established even a *prima facie* case of obviousness of the claimed invention over the claims of the '490 patent."

As set forth above, the claims, particularly claim 18 *(a method of toughening a plastic by mixing rubber with the plastic)*, states that the rubber is being added to *toughen* the polymer matrix. Accordingly, the amount of this *toughener* would have been obviously optimized to achieve a desired set of mechanical properties, particularly degree of flexibility and toughness, of the overall mixture.

Regarding the ODP rejection over 6,998,438, Applicant argues that the ***claims*** do not recite *irradiation-vulcanization* of the latex. Hence, the claims would not have suggested a *spheroidic* rubber phase.

It should be noted that the claims, particularly claims 15 and 16, state that the rubber is added in the form of dry crosslinked powders or in the form of crosslinked rubber latex without drying. Turning to the specification, particularly the examples, it becomes immediately clear to the skilled artisan that the claimed dry crosslinked powders or crosslinked rubber latex are prepared by *irradiation-vulcanization*.

Therefore, said *irradiation-vulcanization* and *spheroidic* rubber phase would have been obviously envisaged in light of claims 15 and 16, and further in light of the working examples – *See: In re Vogel*, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970); MPEP 804, II, B, 1.

Regarding the ODP rejection over 6,423,760, Applicant's argument focuses on the claimed weight ratio of rubber phase to the plastic phase. Applicant argues that, "The Examiner has respectfully not pointed to anything in the claims of the '760 patent to show any such recognition *(of the result-effective nature of this ratio)* and, accordingly, has respectfully not established even a *prima facie* case of obviousness of the claimed invention over the claims of the '760 patent."

As set forth above, the claims, particularly claim 23 *(a method of toughening a plastic by mixing rubber with the plastic)*, states that the rubber is being added to *toughen* the polymer matrix. Accordingly, the amount of this *toughener* would have been obviously optimized to achieve a desired set of mechanical properties, particularly degree of flexibility and toughness, of the overall mixture.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is (571)272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Feely/
Primary Examiner, Art Unit 1796

April 17, 2008